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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,086	12/05/2000	Masaru Aoki	400953	3272

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LEYDIG VOIT & MAYER, LTD
700 THIRTEENTH ST. NW
SUITE 300
WASHINGTON, DC 20005-3960

EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT PAPER NUMBER

2871

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/729,086

Applicant(s)

AOKI ET AL.

Examiner

Prasad R Akkapeddi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 1 and 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed features such as 'a display area', 'signal lines', 'scanning lines', 'crossing of signal and scanning lines', 'a drive circuit area', 'a first line', 'a second line' and 'a channel region', must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

3. The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines double spaced on good quality paper are required.

4. The feature 'crossing of the signal lines and scanning lines' is not properly explained in the specification. Appropriate correction is required.

5. The features 'a drive circuit area, a first line, a second line and a channel region' are not properly described in the specification. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-7 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention: The cited features: "a folded line including a first line linearly extending along a first direction, a second line linearly extending along a second direction and a bent portion connecting the first and second lines" and "driving transistors arranged along first and second lines" and "channel regions of the transistors not overlapping the bent portion when viewed two-dimensionally" are not clear and considered to be indefinite. Since the above cited features are neither properly shown in the drawings nor detailed in the specification, it is difficult to properly interpret the claimed invention in terms of where the fold lines including the first line, second line, their respective directions and the bent direction. Viewing two dimensionally is also not clearly understood because a picture is viewed either from the top, from the side, from bottom or in cross section.

Continued examination of the application is provided based on the best possible interpretation of these features by the Examiner. The applicants are requested to provide further clarification without adding new matter.

8. Claim 10 recites the limitations "the driving transistors and driving circuit area". There is insufficient antecedent basis for this limitation in the claim.

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9. Claims 8 and 9 recites the limitation "an interval of pitch stripes that are traces of scanning of laser beam irradiation" in claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiraki et al. (Shiraki) (U.S. Patent No. 5,844,538).

As to claim 10: Shiraki discloses a thin film transistor panel (70) (Figs. 23-26) for driving a liquid crystal having a display area (108) including a plurality of signal lines (104) and a plurality of scanning lines (105) crossing each other and a plurality of pixel transistors (107) arranged where the signal lines and the scanning lines cross and a gate interconnection (84) for the driving transistors (107) in driving circuit area is arranged along a folded line including a first line linearly extending along a first direction, a second line linearly extending along a second direction different from the first direction, and a bent portion connecting the first and second lines (Fig. 26), and the driving transistors are arranged along the first and second lines, such that channel regions (82) of the transistors do not overlap the bent portion (Fig. 26).

As to claim1: Shiraki discloses a liquid crystal display apparatus including a liquid crystal display, a thin film transistor panel (70) (Figs. 23-26) driving the liquid crystal display, and an opposing substrate (not shown), the TFT panel having a display area (108) including a plurality of signal lines (104) and a plurality of scanning lines (105) crossing each other and a plurality of pixel transistors (107) arranged where the signal lines and the scanning lines cross and a gate interconnection (84) for the driving transistors (107) in driving circuit area is arranged along a folded line including a first line linearly extending along a first direction, a second line linearly extending along a second direction different from the first direction, and a bent portion connecting the first and second lines (Fig. 26), and the driving transistors are arranged along the first and second lines, such that channel regions (82) of the transistors do not overlap the bent portion (Fig. 26).

As to claims 2-9: Figure 26 of Shiraki discloses that (a) a direction from an end point closer to the display area to an end point farther from the display area of each of the lines is reversed in the first and second lines, when viewed from the side of the display area (b) the first and second lines includes a smaller folded line (c) the bent portion includes a line connecting the first and second lines and intersecting almost orthogonally a boundary between the display area and the driving circuit area (d) the bent portion includes a portion where the first and second lines are connected directly at an angle (e) a width of the channel region of the driving transistors is parallel to the first and second lines (f) the

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display area is rectangular, and the driving circuit area does not extend beyond a space between lines extending from two opposing parallel sides of the display area (g) a distance between a first of the driving transistors and a second of the driving transistors neighboring and positioned nearest to the first driving transistor, viewed from the display area is longer (h) the channel region of each of the driving transistors, a distance between a corner of the channel region nearest to the display area and a corner of the channel region farthest from the display area, viewed from the display area, is longer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on 703-308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.



October 29, 2002



William L. Sikes
Supervisory Patent Examiner
Technology Center 2800